



September 23, 2019

Arcelor Mittal USA, Inc.
250 W US Highway 12
Burns Harbor, IN 46304-9745

Work Order No.: 19I1312

Re: NPDES Parameters

Dear Teri Kirk:

Microbac Laboratories, Inc. - Chicagoland Division received 3 sample(s) on 9/21/2019 9:30:00AM for the analyses presented in the following report as Work Order 19I1312.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories.

We appreciate the opportunity to service your analytical needs. If you have any questions, please contact your project manager. For any feedback, please contact Ron Misiunas, Division Manager, at ron.misiunas@microbac.com.

Sincerely,
Microbac Laboratories, Inc.

A handwritten signature in black ink that reads "Carey Gadzala". The signature is written in a cursive, flowing style.

Carey Gadzala
Project Manager

[Microbac Laboratories, Inc.](http://www.microbac.com)

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WORK ORDER SAMPLE SUMMARY**Date:** *Monday, September 23, 2019*

Client: Arcelor Mittal USA, Inc.**Project:** NPDES Parameters**Lab Order:** 1911312

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
1911312-01	001-Composite	001	09/20/2019 07:25	9/21/2019 9:30:00AM
1911312-02	011-Composite	011	09/20/2019 07:06	9/21/2019 9:30:00AM
1911312-03	002-Composite	002	09/20/2019 08:05	9/21/2019 9:30:00AM

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CASE NARRATIVE**Date:** *Monday, September 23, 2019***Client:** Arcelor Mittal USA, Inc.**Project:** NPDES Parameters**Lab Order:** 191312

The Matrix Spike and Matrix Spike Duplicate failed the accuracy criteria for cyanide with a high bias. The precision criteria were met. A Post Digestion Spike was performed and the acceptance criteria met, indicating accurate measurement at the instrument. The following sample was spiked:

<u>Laboratory ID</u>	<u>Sample Name</u>
191312-03	002-Composite

Report has been revised with correct composite date.



Analytical Results

Date: Monday, September 23, 2019

Client: Arcelor Mittal USA, Inc.
Client Project: NPDES Parameters
Client Sample ID: 001-Composite
Sample Description: 001
Matrix: Aqueous

Work Order/ID: 1911312-01
Sampled: 09/20/2019 7:25
Received: 09/21/2019 9:30

Analyses	Certs	AT	Result	MDL	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-CN C/E-1999			Analyst: AJR			
			Prep Date/Time: 09/21/2019 09:50						
Total Cyanide									
Cyanide, Total	ejj	A	0.0026	0.0020	0.0050		mg/L	1	09/21/2019 11:55
			Method: SW-846 9014			Analyst: AJR			
			Prep Date/Time: 09/21/2019 10:07						
Free Cyanide									
Free Cyanide		A	ND	0.0018	0.0062		mg/L	1	09/21/2019 10:35
			Method: EPA 350.1 Rev 2.0			Analyst: AJR			
			Prep Date/Time: 09/21/2019 09:53						
Nitrogen, Ammonia as N									
Nitrogen, Ammonia (As N)	ei	A	0.47	0.054	0.10		mg/L	1	09/21/2019 11:05

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Analytical Results

Date: Monday, September 23, 2019

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	191312-02
Client Project:	NPDES Parameters	Sampled:	09/20/2019 7:06
Client Sample ID:	011-Composite	Received:	09/21/2019 9:30
Sample Description:	011		
Matrix:	Aqueous		

Analyses	Certs	AT	Result	MDL	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-CN C/E-1999			Analyst: AJR			
			Prep Date/Time: 09/21/2019 09:50						
Total Cyanide									
Cyanide, Total	ejj	A	0.0022	0.0020	0.0050		mg/L	1	09/21/2019 11:57
			Method: SW-846 9014			Analyst: AJR			
			Prep Date/Time: 09/21/2019 10:07						
Free Cyanide									
Free Cyanide		A	0.0019	0.0018	0.0062	J	mg/L	1	09/21/2019 10:40
			Method: EPA 350.1 Rev 2.0			Analyst: AJR			
			Prep Date/Time: 09/21/2019 09:53						
Nitrogen, Ammonia as N									
Nitrogen, Ammonia (As N)	ei	A	0.33	0.054	0.10		mg/L	1	09/21/2019 11:08

Analytical Results

Date: Monday, September 23, 2019

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	1911312-03
Client Project:	NPDES Parameters	Sampled:	09/20/2019 8:05
Client Sample ID:	002-Composite	Received:	09/21/2019 9:30
Sample Description:	002		
Matrix:	Aqueous		

Analyses	Certs	AT	Result	MDL	RL	Qual	Units	DF	Analyzed	
				Method: SM 4500-CN C/E-1999			Analyst: AJR			
Prep Date/Time: 09/21/2019 09:50										
Total Cyanide										
Cyanide, Total	ejj	A	ND	0.0020	0.0050	U	mg/L	1	09/21/2019 11:58	

Analytical Results

Date: Monday, September 23, 2019

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	19I1312-03RE1
Client Project:	NPDES Parameters	Sampled:	09/20/2019 8:05
Client Sample ID:	002-Composite	Received:	09/21/2019 9:30
Sample Description:	002		
Matrix:	Aqueous		

Analyses	Certs	AT	Result	MDL	RL	Qual	Units	DF	Analyzed
			Method: SW-846 9014			Analyst: EF			
Prep Date/Time: 09/22/2019 10:27									
Free Cyanide									
Free Cyanide		A	ND	0.0018	0.0062		mg/L	1	09/22/2019 12:20

ANALYTE TYPES: (AT)

A, B = Target Analyte

I = Internal Standard

M = Summation Analyte

S = Surrogate

T = Tentatively Identified Compound (TIC, concentration estimated)



QC SAMPLE IDENTIFICATIONS

BLK = Method Blank

DUP = Method Duplicate

BS = Method Blank Spike

MS = Matrix Spike

ICB = Initial Calibration Blank

CCB = Continuing Calibration Blank

CRL = Client Required Reporting Limit

PDS = Post Digestion Spike

QCS = Quality Control Standard

ICSA = Interference Check Standard "A"

ICSAB = Interference Check Standard "AB"

BSD = Method Blank Spike Duplicate

MSD = Matrix Spike Duplicate

ICV = Initial Calibration Verification

CCV = Continuing Calibration Verification

OPR = Ongoing Precision and Recovery Standard

SD = Serial Dilution

CERTIFICATIONS (Certs)

Below is a list of certifications maintained by the Microbac Merrillville Laboratory. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. Complete lists of individual analytes pursuant to each certification below are available upon request.

d Illinois EPA drinking water, wastewater and solid waste analysis (#200064)

i Kansas Dept Health & Env. NELAP (#E-10397)

j Kentucky Wastewater Laboratory Certification Program (#108202)

FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)

J:	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
MDL:	Minimum Detection Limit
RL:	Reporting Limit
RPD:	Relative Percent Difference
U:	The analyte was analyzed for but was not detected above the reported quantitation limit. The quantitation limit has been adjusted for any dilution or concentration of the sample.

Cooler Receipt Log

Cooler ID: Default Cooler

Temp: 14.2°C
 MICROBAC®

Comments

No time

Cooler Inspection Checklist

Ice Present or not required?	Yes
Shipping containers sealed or not required?	Yes
Custody seals intact or not required?	Yes
Chain of Custody (COC) Present?	Yes
COC includes customer information?	Yes
Relinquished and received signature on COC?	Yes
Sample collector identified on COC?	Yes
Sample type identified on COC?	Yes
Correct type of Containers Received	Yes
Correct number of containers listed on COC?	No
Containers Intact?	Yes
COC includes requested analyses?	Yes
Enough sample volume for indicated tests received?	Yes
Sample labels match COC (Name, Date & Time?)	No
Samples arrived within hold time?	Yes
Correct preservatives on COC or not required?	Yes
Chemical preservations checked or not required?	Yes
Preservation checks meet method requirements?	Yes
VOA vials have zero headspace, or not recd.?	Yes

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Invoice Address
 Address: Arcelor Mittal
 Client Name: Arcelor Mittal
 Address: Temi Kirk
 City, State, Zip: Carey Gadzala
 Contact: NPDES Parameters
 Telephone No.: 09/21/2019

Turnaround Time
 Routine (5 to 7 business days)
 RUSH* (notify lab)

Temperature Upon Receipt (°C)
 Therm ID

Holding Time
 Samples Received on Ice? Yes No N/A
 Custody Seals Intact? Yes No N/A

Report Type
 Results Only Level 1 Level 2 Level 3 Level 4 EDD

Send Invoice via: Mail Fax e-mail (address)

Compliance Monitoring? Yes No
 Agency/Program

PO No.:

Sampler Signature: Chet Dulin

Requested Analysis

* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify)
 ** Preservative Types: (1) HNO3, (2) H2SO4, (3) HCl, (4) NaOH, (5) Zinc Acetate, (6) Methanol, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane, (U) Unpreserved

Lab ID	Client Sample ID	Date Collected	Time Collected	No. of Containers	Matrix	Grab / Comp	Preservative Types **	NK3 CNT	Additional Notes
001	92119	9/21/19	0725	1				X	19 I 1312
011	↓	↓	0706	1				X	-01
002	↓	↓	0805	1				X	-02
								A	-03

Possible Hazard Identification
 Hazardous Non-Hazardous Radioactive

Comments
 14.5
 -0.3
 14.2

Sample Disposition Dispose as appropriate Return Archive

Relinquished By (signature) [Signature] **Date/Time** 9/21/19 0835

Relinquished By (signature) [Signature] **Date/Time** 9/21/19 0830

Relinquished By (signature) [Signature] **Date/Time** 09-21-19 0930

Chain of Custody

ArcelorMittal Burns Harbor/Microbac Labs

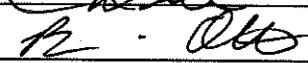
Daily During Zebra Muscle Treatment

Lab Work No: _____

* Date Obtained: 9-21-19
 ** Sample Date: 9-20-19

Location	Time	Sampler	Type	Preserved	Cooled	Containers			Parameters	Comments
						Type	Qty	Vol. (ml)		
001	<u>07:25</u>	<u>OP</u>	Grab	No	No	plastic	1	500	total residual chlorine	<u>0.00</u>
002	<u>08:05</u>	<u>J</u>	Grab	No	No	plastic	1	500	total residual chlorine	<u>0.00</u>
003	<u>07:50</u>	<u>J</u>	Grab	No	No	plastic	1	500	total residual chlorine	<u>0.00</u>
DUP			Grab	No	No	plastic	1	500	total residual chlorine	<u>0.00</u>

* From composite sample bottle for that day

Relinquished by: 
 Received by: 

Date: 9-21-19
 Date: 9/21/19

Time: 08:28
 Time: 0835

Microbac Laboratories, Inc. - Chicagoland Division

Total Residual Chlorine - Amperometric Titration - SM Method 4500-ClE - 2000
for Arcelor Mittal - Burns Harbor

Date/Time: 7/20/19 0810 Exp. Date 6/30/20
 Analyst: DAO
 pH Paper Lot #: HJ626 Exp. Date 7/29/20
 LCS ID: A9074 Exp. Date 5/31/20
 STD ID / Lot # 146367
 KI Solution: 147996
 Acetate buffer: 145348
 PAO Titrant: 145348

Sample ID	Sample Vol. (mL)	pH (pH Units)	Titrant Start (mL)	Titrant Stop (mL)	Titrant Vol. (mL)	Result (mg/L)
Blank	200	4.0	0.00	0.00	0.00	0.00
LCS		4.0		0.02	0.02	0.02
Outfall 001		4.0		0.00	0.00	0.00
Outfall 002		4.0		0.00	0.00	0.00
Outfall 003		4.0		0.00	0.00	0.00
Outfall 011		4.0		0.00	0.00	0.00
Outfall 011 Dup		4.0		0.00	0.00	0.00
Outfall 003 Dup	✓	4.0		0.00	0.00	0.00

Date/Time: 7/21/19 0835 Exp. Date 6/30/20
 Analyst: BAO
 pH Paper Lot #: HJ626 Exp. Date 7/29/20
 LCS ID: A9074 Exp. Date 5/31/20
 STD ID / Lot # 146367
 KI Solution: 147996
 Acetate buffer: 145348
 PAO Titrant: 145348

Sample ID	Sample Vol. (mL)	pH (pH Units)	Titrant Start (mL)	Titrant Stop (mL)	Titrant Vol. (mL)	Result (mg/L)
Blank	200	4.0	0.00	0.00	0.00	0.00
LCS		4.0		0.10	0.10	0.10
Outfall 001		4.0		0.00	0.00	0.00
Outfall 002		4.0		0.00	0.00	0.00
Outfall 003		4.0		0.00	0.00	0.00
Outfall 011		4.0		0.00	0.00	0.00
Outfall 011 Dup		4.0		0.00	0.00	0.00
Outfall 001 Dup	✓	4.0		0.00	0.00	0.00

Chlorine, mg/L = (Titrant Vol., mL) (200 mL) / (Sample Vol., mL)

revision: a_01_2016